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at the address below.

Midwest Instruction & Computing Symposium
University of Wisconsin
204E North Hall
410 S 3rd St.
River Falls, WI 54022

Phone: (715) 425-0660
Fax: (715) 425-0657

east@cs.uni.edu

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Technical Session 1: 2:00 – 3:00 Friday March 27th

Davies 320 A&B	IoT	Chair: Naeem Seliya	PAGE
2:00	Evaluating Intrusion Detection Systems Across Class Imbalance, Performance, and Explainability Using Large-Scale IoT Network Data	Jacob Diamond, James Francis McCormack and Naeem Seliya	N/A
2:30	Design and Implementation of a Lightweight Integrity and Authentication Protocol for IoT-Based Healthcare Applications Using Wireless Body Area Network	Stephen Asamoah Adusei	1

Davies 311		Chair: Rushit Dave	PAGE
2:00	Evaluating Generalization in Deepfake Detection Architectures Beyond Benchmark Accuracy	Rushit Dave, Eliana Assefa, Fenet Getachew and Mansi Bahvsar	5
2:30	The Human Signature: Facial and Behavioral Biometrics in Cyber Security	Rushit Dave, Aman Bista and Mansi Bhavsar	20

Davies 320 F	AI Applications	Chair: Xiang Ma	PAGE
2:00	Tracking Pasture Farm Lifecycles in the Brazilian Amazon: A Soil-Conditioned Composite Success Index	Brett Storoe, Tyge Plater and Michael Link	35
2:30	Proactive Urban Forestry Management: A Machine Learning Approach to Predicting and Prioritizing Tree Pruning in Milwaukee	Joshua Myers, Eddy Chukwuma-Ugwu and Xander Ede	49

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2:00	Evaluation of 3D CNN Architecture for Automated Intracranial Aneurysm Detection in CT Angiography	Evan Schubert, Cade Rousseau, Venkata Karri and Nikolas Palacios	63
2:30	HySSS-Mamba	Peter Kwaterski, Austin Koske, Miles Trompeter, Isabella Ruiz, Vlad Wilson, Audrey Chapman and Caleb Gray	N/A

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2:00	Real-Time Object Detection Navigation Assistance System	Vincent Elouie, Max Forst, Kevin McGrath, Jack Schaefer and Ediz Polat	81
2:30	From Revit to Robot: BIM-Driven Simulation for Autonomous Building Operations	Adrian Manchado, Tanner Cellio, Owen Pacetti, Diego Gonzalo, Joseph Loduca, Delsoro Some, Nicolas Picha and Steven Thomas	92

Technical Session 2: 3:30 – 4:30 Friday March 27th

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4:00	15 years of Sorting Competitions	Elena Machkasova	121

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3:30	Machine Learning in Autonomous Vehicles: Progress, Datasets, and Barriers to Achieving SAE Level 5 Full Autonomy	Rushit Dave, Betlehem Gebremeskel and Mansi Bhavsar	133
4:00	Applications of Communication in Multi-Agent Reinforcement Learning for Competitive Robotics	Andrew Needham, Charles Malohn, Corbin Schaffer, Jacob Newberry, Paxson Gottschalk and Leigh Goetsch	149

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3:30	Multimodal Image Colorization: Text-Conditioned Guidance for Grayscale-to-Color Translation	Colten Reissmann and Hugo Garrido-Lestache Belinchon	164
4:00	Surrogate Optimization for Direct Feature Selection	Dylan Norquist, Aiden Telgenhof, Evan Roegner and Jeremy Kedziora	179

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4:00	Fun With Fundoscopy: Accessible Screening for Diabetic Retinopathy	Will Sebelik-Lassiter, Sydney Hengehold, Faith Papazoglou, Joseph Pearson and Ahmed Sayed	N/A
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4:00	Quant Convergence: Bridging Classical Value Investing and Modern Factor Models for Systematic Equity Selection	Augusto Yamazaki and Hugo Garrido-Lestache	200

Robotics Contest and Pizza Party

Sponsored by:



Programming Contest

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Davies 320 F		Chair: Ronni Kurtzhals	PAGE
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9:00	Utilizing Convolutional Neural Networks for Decoding 8-FSK Digital Radio Communications	Daniel Portwine, Peli Orugbani, Brett Servais and John Weinrich	N/A
9:30	Consequentialism: Counterfactual Sampling to Speed Learning	Adrian Manchado and Jeremy Kedziora	N/A

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10:30	Scribby: A Multi-Level LLM Framework for Semantic Video Analysis	Julian Abelarde, Hugo Garrido-Lestache Belinchon and Julian Abelarde	402
11:00	Code as Images: Investigating Visual Representation Strategies for Repository-Scale Code Reasoning	Grant Glorioso	423

Keynote: 11:45



Anne Denton: With a background in computer science and physics, Anne Denton has contributed to collaborative projects in most natural sciences, genomics, and agriculture. A professor of computer science at North Dakota State University, she has published over 80 peer-reviewed journal and conference publications and has led projects funded at a total of more than one million dollars. Her data science work prompted her to identify ethics concepts that are rigorous enough to steer future quantitative research. Fargo's KFGO radio station has interviewed her eight times in recent years on a variety of topics related to the social impact of artificial intelligence.